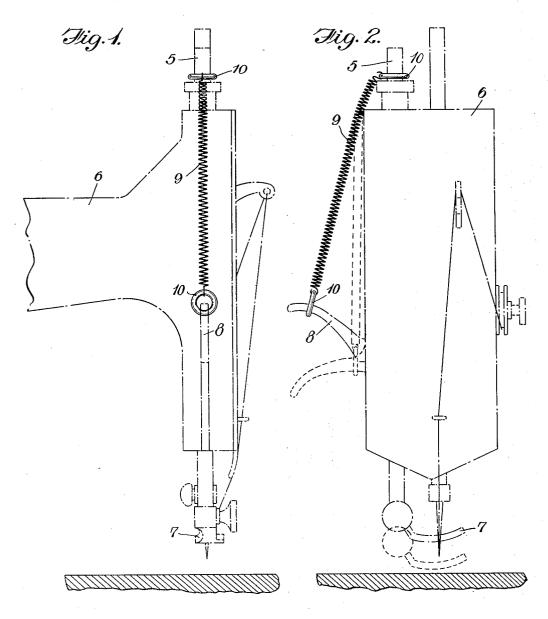
SPRING DARNING ATTACHMENT FOR SEWING MACHINES

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SPRING DARNING ATTACHMENT FOR SEWING MACHINES

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8 Claims. (Cl. 112-236)

The invention relates to attachments for sewing machines which will permit the machine to be used for darning, braiding, embroidering and the like, as well as for ordinary sewing.

Devices intended for this general purpose have been designed, but are generally of a complicated nature, or require special adjustments. Moreover, in all such devices known to me the attachment must be removed from the machine 10 in order to permit of ordinary sewing.

The primary object of the present invention is, therefore, to provide an inexpensive attachment which may be readily applied to the conventional sewing machine for holding the presser 15 bar thereof in such position that darning, embroidery and other special work may be done thereon, but which does not have to be removed when doing plain sewing.

A further object of the invention is to pro-20 vide an attachment which may be applied to the conventional sewing machine without requiring the machine to undergo the slightest change (as for example changing tension, stitch, unscrewing parts, adjustment of the feed dog, 25 presser bar or thumb screw).

These objects are attained according to the preferred embodiment of my invention by the use of a simple coil spring having rings, one at each end thereof, for attachment with the 30 presser bar and presser foot lifting arm respectively. One ring of the attachment is first engaged over the presser bar leaving the spring hanging down, whereupon the lower ring is slid over the presser bar lifter. The tension of the 35 spring ensures excellent work, and keeps the presser bar at the desired height, or close to the feed dog, when sewing or darning.

The attachment is simple in construction, cheap to manufacture, and is readily applied and 40 detached.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawing, forming a part 45 of this specification and in which like numerals are employed to designate like parts throughout the same.

Fig. 1 is a side elevation view of the attachment applied to the presser bar of a sewing 50 machine, and

Fig. 2 is a view of the same looking from the end of the machine.

In the drawing, wherein for the purpose of illustration I have shown a preferred embodi-55 ment of my invention, the numeral 5 denotes the presser bar of a conventional sewing machine 6, having a presser foot 7 at its lower end and a lifting arm 8 for raising the presser bar, which construction is common in the conventional type of treadle-operated sewing machine. 60

Referring more particularly to my attachment, the device consists of an expansible coil spring 9 having a ring 10 attached to each end thereof. In applying the device to a sewing machine, the ring 10 at one end of the spring 9 65 is engaged over the upper end of the presser bar 5 and the spring expanded so as to permit the ring at the opposite end of the spring to be engaged over the lifting arm 8.

In operation, the presser foot 7 of the conven- 70 tional sewing machine is normally disposed in either an up or down position and is moved from one position to the other through operation of the lifting arm 8. In order to perform darning or embroidery work on the conventional machine, 75 it is necessary for the presser foot 7 to be raised above the normal position of the foot when doing plain sewing, and with my attachment applied to the machine, it will be seen that the lifting arm 8 will be held in any adjusted position, 80 so that the presser foot may be elevated to the desired degree. This adjustment may be accomplished by shifting the lower ring 10 along the lifting arm 8 to the desired position. The ring 10 will remain in whatever position it is placed 85 and the spring 9 will exert a force the effect of which will vary according to the distance of the ring 10 from the fulcrum of the lifting arm 8. By moving the ring 10 to the extreme right as indicated in dotted lines in Fig. 2 the sewing ma- 90 chine may be used for plain sewing without removing the attachment from the lever arm. In the full line position shown in Fig. 2 the ring 10 is applied at a substantial distance from the fulcrum of the lifting arm and the machine may 95 be used as a darner.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that certain changes in the shape, size and arrangement of the parts may be made without departing from the spirit of the invention or the scope of the subjoined claims. For example, the rings 10 on the ends of the coil may be changed for others of different size, in order that the attachment will better fit the various types of machines having longer, shorter, thicker or thinner presser bars. To this end the rings 10 are made detachable. In this manner the same spring may be employed for machines of various 110

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types, it being only necessary to provide different sized rings to suit varying requirements.

What I claim is:

An attachment for a conventional sewing 5 machine of the type having a presser bar and presser foot lifting arm; comprising an expansible spring coil having means at one end there of adapted to be attached to the upper end of the machine head and means at the other end for sliding attachment to the presser foot lifting arm, the spring being of such length and stiffness that it is maintained under sufficient tension when the attaching means are applied to the respective parts of the sewing machine to hold
the presser foot in any position above the work plate without pulling it to the upward limit of its throw.

2. In a device of the character described, the combination with the presser bar and lifting arm of a sewing machine, of a tension spring having one end connected to the upper end of the presser bar and its opposite end having a slidingly adjustable connection with the lifting arm, the spring being of such length and stiffness that it is maintained under sufficient tension to hold the presser foot in any position above the work plate without pulling it to the upward limit of its throw.

3. In a device of the character described, the combination with the presser bar and lifting arm of a sewing machine, of a tension spring having a ring at each end thereof adapted to be connected to the upper end of the presser bar and the lifting arm respectively, the spring being of such length and stiffness that it is maintained under sufficient tension to hold the presser foot in any position above the work plate without pulling it to the upward limit of its throw.

4. A device as set forth in claim 3 in which 40 the rings are detachable and are adapted to be replaced by others of different size to fit various types of presser bars.

5. In a device of the character described, the combination with the lifting arm of a sewing machine, of spring tension means adjustably connected at one end to the lifting arm for auto-

matically varying the lifting effect according to the distance of the point of attachment from the fulcrum of the lifting arm, the spring being of such length and stiffness that it is maintained under sufficient tension to hold the presser foot in any position above the work plate without pulling it to the upward limit of its throw.

6. In a device of the character described, the combination with the lifting arm of a sewing machine, of a tension spring having one end attached to a fixed member at the upper portion of the machine, and its opposite end adjustably connected to the lifting arm, whereby the lifting effect of the spring may be automatically varied according to the distance of the point of attachment from the fulcrum of the lifting arm, the spring being of such length and stiffness that it is maintained under sufficient tension to hold the presser foot in any position above the work plate without pulling it to the upward limit of its throw.

7. In a device of the character described, the combination with the presser bar and lifting arm of a sewing machine, of a tension spring having one end connected to the upper end of the presser bar and its opposite end adjustably connected to the lifting arm, the spring being of such length and stiffness that it is maintained under sufficient tension to hold the presser foot in any position above the work plate without pulling it to the upward limit of its throw.

8. An attachment for a conventional sewing machine of the type having a presser bar and presser foot lifting arm; comprising an expansible spring coil having a ring at each end thereof adapted to be applied over the upper end of the presser bar and over the presser foot lifting arm respectively, the spring being of such length and stiffness that it is maintained under sufficient tension when the rings are applied to the respective parts of the sewing machine to hold the presser foot in any position above the work plate without pulling it to the upward limit of its throw.

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